

Infrastructures for eScience / eScholarship

German Initiatives in a European Context

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Overview



- German Players in a confusing environment
- Data → Information → Knowledge: Selected eScience Initiatives
 - Infrastructure for data and computing: D-Grid
 - eScholarship/eScience: Virtual Research Environments
 - Digital Library, (moderately) successfull: Max Planck Digital Library
 - Digital Library, not (yet) successfull: German Digital Library
 - From 'Information' to 'Knowledge': Theseus and Semantic Technology
- Context: what can be done on national level?
- A concluding word on DGI

And a caveat: most of what I'm presenting is my personal position rather than an official, agreed statement made on behalf of DGI!

Players on the German Scene: a Confusing Environment

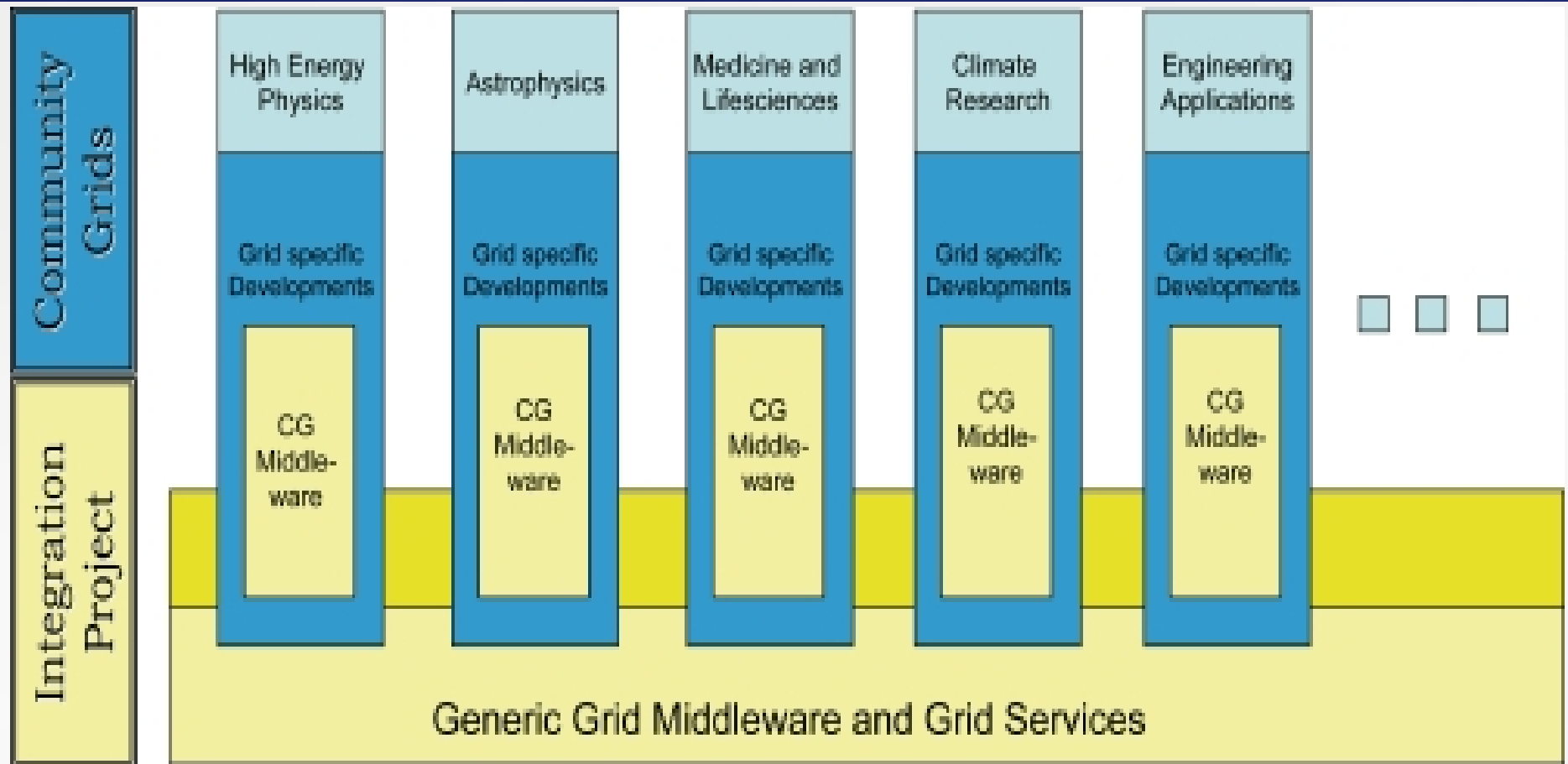


- Infrastructure funding: BMBF (Ministry of Education and Research)
- Research and Digital Libraries funding: Deutsche Forschungsgemeinschaft (DFG)
- Academia: 16 federal states
- Extra-academic research: Max Planck Gesellschaft (MPG), Helmholtz, Fraunhofer (applied science)
- Concertation: Deutsche Initiative für Netzwerkinformationen (DINI)
- Digital Library research: HU B-SLIS (my institute)
- ...

Infrastructure: D-Grid

- **Data and computing** infrastructure
- Funded by BMBF (2004-2010)
- The promise of grid architectures:
 - enable direct network based access to computers, storage, scientific instruments and experiments, sensors, applications, data, and middleware services.
 - almost infinite computing and storage capacity
 - cost reduction through a utility model.
- Community projects in **high-energy physics**, **astrophysics**, alternative **energy**, **medicine** and **life sciences**, **climate sciences**, **engineering sciences**, and **scientific libraries**.
- Integration project (DGI) for generic grid middleware resources such as authentication / authorisation facilities

D-Grid: Big Picture



- European and global context
 - Enabling Grids for E-Science (EGEE, <http://public.eu-egee.org/>)
 - Semantic Grid Community (<http://www.semanticgrid.org/>)

- **Virtual research environments** for
 - Network based collaborative working modes
 - New collaborative scenarios
 - New approaches for dealing with scientific data and information
- Using new components or new aggregations of known interoperable components of data and information related infrastructure such as
 - Wikis, blogs, tagging,
 - Project Management,
 - Virtual organisations
 - Primary data repositories
 - Authentication structures
- Enabling a better co-operation of research networks and information institutions and **more specifically libraries.**

Digital Libraries

■ German Digital Library (DDB)

- not (yet) successful
- Badly needed as aggregating instance for Europeana
- For the time being all we have in hand is a position paper prepared by the federal government, the federal states and the municipalities
- Beta version planned for 2010 / 2011
- Funding situation remains unclear
- *Diffuse customer and stakeholder profile*

■ Max Planck Digital Library (MPDL)

- (moderately) successful
- Strong technical partnership with eSciDoc (FIZ Karlsruhe)
- Relatively well focussed and coherent decision structures within MPG
- *Clear customer and stakeholder profile (Max Planck Institutes)*
- → <http://www.mpdl.mpg.de/>

Theseus: Semantic Technology



- Semantic contextualisation: from 'Information' to 'Knowledge'
- Has a conflictual pre-history: I almost dare not to mention Quaero!
- Driven by computer science, applied science and industry with key players such as Fraunhofer, SAP, Siemens, DFKI ...
- “... an innovative, groundbreaking **knowledge infrastructure** allowing entirely new forms of **knowledge access**, **knowledge management** and web-based services, applications and business models.” (Wahlster, DFKI)
- Scenarios
 - ALEXANDRIA – Knowledge discovery and organisation services for end users
 - CONTENTUS – Multimedia in cultural heritage institutions
 - MEDICO - Syntax and vocabularies for medical image retrieval
 - ORDO – automated content categorisation and organisation
 - TEXO – Design, offering, combination, delivery, accounting of semantics based web services
 - PROCESSUS – IT enabled business knowledge administration
- <http://www.theseus-programm.de/en-US/home/default.aspx>



Key question: what can / should be done on national level?



- As far as Germany is concerned: very little!
 - Research infrastructure in a WWW based context is transnational by nature
 - Fragmentation of the German landscape makes effective national strategies even less likely
 - We can make the best use of German resources in directly contributing to European infrastructure endeavours
- The primary context thus is defined in
 - European Research Agenda (ERA)
http://ec.europa.eu/research/era/index_en.html
 - European Strategy Forum on Research Infrastructures (ESFRI)
<http://cordis.europa.eu/esfri/>
- Thus we substantially contribute (and sometimes take the lead) in
 - DRIVER (<http://www.driver-repository.eu/>)
 - Europeana (<http://www.europeana.eu>)

A concluding word on DGI

- DGI had a very strong position with much political backing in the 'Information Society' approach pushed by BMBF in the 90ies (*Global-Info* and related initiatives) - in a pre-WWW perspective
- We lost a substantial part of this position with the **information paradigm shift to the WWW** and – as a consequence – the decline of *Global-Info* and even more with the weakening of BMBF and the partial **erosion of professional identity**
- But we keep a large member base including key players such as for instance FIZ Karlsruhe: **major academic and industrial members!**
- → We try to strategically reposition DGI in the new paradigm of information and knowledge organisation and management
 - eInfrastructure is well covered by other parties
 - Digital Library research is well covered by others
 - **Semantic contextualisation for knowledge creation is the way to go**
 - Thanks for your attention: questions?